

CLAIMS

1. Electric motor (1) comprising a stator (2), a magnetic induction core (3) constrained to said stator, at least one coil of magnetic excitation (4a, 4b) associated to said induction core, a rotor (5) of substantially cylindrical shape comprising at least one permanent magnet adapted to form on said rotor at least two magnetic poles of opposite polarity, said core and said at least one coil being adapted to form at least two magnetic induction poles of opposite polarity on said core, characterised in that said core is produced in a single body and comprises a central hole (31) for housing said rotor (5), at least two opposing extensions adapted to form said at least two magnetic induction poles in opposite position from each other and in proximity to said central hole, at least two opposing and external magnetic separation notches, alternately arranged with respect to said extensions, adapted to generate a magnetic separation between two adjacent, opposite-sign poles of the induction core, such that the rotor is arranged with each magnetic pole between two adjacent poles of the induction core when the motor is de-energised.
2. Motor according to claim 1, comprising an air gap (8) of ring shape.

3. Motor according to claim 1, in which said induction core (3'') comprises four equidistant extensions (32'', 33'', 34'', 35'').
4. Motor according to claim 3, in which said rotor  
5 (5'') comprises four equidistant permanent magnets (51'', 52'', 53'', 54'').
5. Motor according to claim 1, in which said induction core (3') comprises two opposing extensions (32', 33').
6. Motor according to claim 5, in which said rotor (5')  
10 comprises two opposing permanent magnets (51', 52').
7. Motor according to claim 1, in which said rotor comprises a single permanent magnet with alternate poles arranged on the side surface of said rotor.
8. Motor according to claim 1, comprising a polarity  
15 sensor adapted to control the position of the rotor.
9. Motor according to claim 8, in which said sensor is a Hall-Effect sensor.
10. Motor according to claim 1, characterised in that electrical energy is gained by the ends of the  
20 induction coils when mechanical energy is applied to the rotation axis.
11. Motor according to claims 1, 4 and 6 characterised in that permanent magnets are secured by insertion.
12. Motor according to claims 1 and 3 characterised in  
25 that a coil is associated with the induction pole.
13. Motor according to claim 8, characterised in that

the polarity sensor is optical.

14. Motor according to claims 1 and 8, characterised in that the polarity exchange is carried out with a brush manifold.